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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/809,389 | 03/26/2004 | Hajime Nakao | Q80691 | 7565 |

23373 7590 09/19/2006
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

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| EXAMINER |
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WALKE, AMANDA C

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| ART UNIT | PAPER NUMBER |
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1752

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/809,389 | Applicant(s) NAKAO ET AL. | |
| | Examiner Amanda C. Walke | Art Unit 1752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/5/2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama et al (EP 1179750).

Kodama et al disclose a positive photoresist composition comprising a resin, a solvent, nitrogen-containing basic compound (page 82), a surfactant (page 85), and an acid generator (pages 7-20).

The resin of the reference appears to meet the instant claim limitations. Specifically, the reference clearly teaches monomer meeting the instant claim limitations, and appears to have almost identical teachings. For example, (IV) is clearly preferred in [0041], V-1 to V-4 in [0049], and AII in [0114] along with various acrylic and methacrylic monomers. It is also noted that all of the monomers are either methacrylic or acrylic and examples of both are widely disclosed.

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Furthermore, the reference presents a number of suggested resins such as resin 36, which meets the claim limitations with the exception of the adamantyl group which is substituted with an ethyl group in the "1" position which does not meet the limitations of AII. However, in section [0114] these monomers are taught to be equivalent to those having substituents in the instantly claimed positions. One such monomer is employed in a resin having similar repeat units to that of 36. In resin 34, a monomer meeting the limitations of AII is employed, and it would have been obvious to one of ordinary skill in the art to prepare resin 36 choosing to employ the adamantyl group containing monomer of 34 in the place of 36 as they are taught by the reference to be equivalent. Furthermore, it would have been obvious to one of ordinary skill in the art to add a lactone moiety which is preferred by the reference to any of monomers 6, 7, 13, or 14. With respect to the Tg requirement, the reference is silent with respect to a preferred Tg for the resin, however, given that the resins/ monomers taught by the reference are virtually the same as those instantly claimed, it is the position of the examiner absent evidence to the contrary, the resins of the reference meet the limitation.

With respect to the solvent, the reference clearly teaches the use of a mixed solvent in sections [0214] and [0215] and tables on pages 109 and 110. Sample #69 employs a mixed solvent of cyclohexanone (cyclic ketone b) and ethyl lactate (alkyl lactate a), which appears to meet the instant claim limitations. The reference also suggests the use of cyclopentanone, gamma-butyrolactone, methyl ethyl ketone, and PGMEA.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al (6,787,282).

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Sato et al disclose a positive photoresist composition comprising a resin, a solvent, nitrogen-containing basic compound (col. 69), a surfactant (col. 68), and an acid generator (col. 43-67).

The resin of the reference appears to meet the instant claim limitations. Specifically, the reference clearly teaches monomer meeting the instant claim limitations, and appears to have almost identical teachings. For example, (IV) is clearly preferred in column 31, V-1 to V-4 in columns 17 and 18, and AII in column 16 along with various acrylic and methacrylic monomers. It is also noted that all of the monomers are either methacrylic or acrylic and examples of both are widely disclosed. Furthermore, the reference presents a number of suggested resins such as resins 1, 2, 4, 5, and 10, which meets the claim limitations with the exception of the lactone containing monomer which is clearly taught by the reference. However, in resins 7 and 9 these monomers are taught to be used with the hydroxyl-containing adamantyl group containing monomers also employed in resins 1, 2, 4, 5, and 10. Therefore, it would have been obvious to one of ordinary skill in the art to prepare resins 1, 2, 4, 5, and 10 choosing to employ the lactone group containing monomer of 7 or 9 as they are taught by the reference to be preferred.. With respect to the Tg requirement, the reference is silent with respect to a preferred Tg for the resin, however, given that the resins/ monomers taught by the reference are virtually the same as those instantly claimed, it is the position of the examiner absent evidence to the contrary, the resins of the reference meet the limitation.

With respect to the solvent, the reference clearly teaches the use of a mixed solvent in column 71 and table 2 in column 77. The samples employ a mixed solvent mainly comprising

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PGMEA (a) and PGME, however one sample employs gamma-butyrolactone with these solvents which is a cyclic ketone.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 10/937270. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reference claims a photoresist composition comprising the same components including identical resins (claim 9 claims a combination of instant VII, AII, and V-1 to V-4; 18-22 claims the PAG, surfactant, and nitrogen containing compound; claim 8 claims a solvent having *at least* a cyclic ketone, which is demonstrated in the examples to be that plus PGMEA, PGMEP, or ethyl lactate all of which are included as (a))). Therefore it would have been obvious to one of ordinary skill in the art to prepare the material of 10/937270, with the end product meeting the instant claim limitations.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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7. Claims 1-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,787,282. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reference claims a photoresist composition comprising the same components including identical monomers (claim 1 requires an acrylic or methacrylic monomer with a an adamantyl group containing monomer; claim 2 further adds a lactone monomer; claim 3 adds a compound of (v-1) and (V-4); claim 8 claims the specific structure of IV). Claims 9-15 require a nitrogen containing basic compound, surfactant, PAG, and solvent, which is described by the specification to be a mixed solvent comprising those meeting the instant claim limitations as discussed above.

Therefore it would have been obvious to one of ordinary skill in the art to prepare the material of Sato (6,787,282), with the end product meeting the instant claim limitations.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda C. Walke whose telephone number is 571-272-1337.

The examiner can normally be reached on M-R 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Amanda C Walke
Primary Examiner
Art Unit 1752

ACW
September 15, 2006